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National Data Sets: Sources of Information for Canadian Child Care Data

by Dafna E. Kohen, Barry Forer and Clyde Hertzman

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Abstract

The present review provides a description of various Canadian national survey data sets that could be used to examine issues related to child care use. National data sets dealing with patterns of employment, time use, family earnings, social support, and child, adolescent, or adult health measures were included. We conclude that numerous questions remain unanswered in terms of addressing the relationship between patterns of employment, use of child care, family roles and responsibilities, and associations with the health of families. Recommendations are made about information that has not been collected but may prove to be useful in addressing these issues. Moreover, we conclude that existing Canadian national survey data could be used to address several issues related to patterns of care use as well as the impact on children and families.

Keywords: child care, Canadian survey data, review.

Introduction

Families are increasingly using day cares and making other arrangements to care for their children. Changes in family structure and employment patterns have led to the increased use of different types of child care arrangements for preschool as well as school-aged children. The last decade has seen particularly sharp growths in the employment rate of women with children and in the number of dual-earner families. In 1994, 63% of women with children were employed and in the last 25 years the number of dual-earner families has almost doubled (from 33% in 1967 to 61% in 1992; Statistics Canada, 1995). The number of dual-earner families and the number of women in the labour force has increased dramatically. In the last 30 years, the number of children in paid care arrangements with mothers in the labour force has more than tripled (from 357,000 in 1967 to 1,360,000 in 1995; Beach, Bertrand and Cleveland, 1998). The use of formal care arrangements is a reality and demands are expected to increase for the future.

Much of the existing literature focuses on U.S. studies (Petit et al., 1997; Posner and Vandell, 1994; Vandell and Corasaniti, 1988; Vandell and Ramanan, 1991; Ross et al., 1992), and little work has been done examining the effects of care arrangements for Canadian children. For example, although the changes in work patterns have implications for child care, little is known about the characteristics that influence Canadian families' choices for day care and after-school care. Several national longitudinal surveys exist in Canada, and although the primary focus is not on child care arrangements, data are collected about a variety of factors that can increase our understanding about care decisions that families make while one or both parents are working or studying. Decisions about employment and decisions about child care are linked. Survey data from various Canadian national data sets have been collected on child care or related information such as family demographic characteristics, detailed information about patterns of employment, balance of family and employment responsibilities, child-related demographics, information on child care, and data on child outcomes. The purpose of the present paper is 1) to review the available national data surveys relevant to studying issues of employment, child care, and family and child well-being; 2) to summarize existing research using Canadian National survey data examining issues of family, employment and child care; 3) to identify policy-relevant areas of research that could be answered using existing National data sources; and 4) to identify gaps where data are lacking. No single source or survey currently exists compiling a coherent or complete picture of parental labour force experiences, family and household responsibilities, child care decisions, and associations with family, child health, and child well-being. However, a variety of data sources described in the present paper have been collected and have relevant information to answer several questions related to child care. For example, what characteristics are associated with parental decisions to work part-time? Is family size associated with the types of jobs parents hold, the number of hours parents work, and the type of care they use? What factors influence Canadian families' expenditures on child care? How are care arrangements associated with preschool as well as school-aged children's developmental outcomes? Do patterns of employment and care arrangement have long-term effects on child development?

Data are collected for a number of different reasons and the need for various surveys is proof of this. Cleveland cogently states that different sources of data address different issues (Cleveland, in press) and differing interests result in a different survey focus. Some surveys have been designed to examine conditions and barriers of employment, some focus on family functioning or parental

mental health, other areas of focus could include child care, early childhood education or early child development. The questions that the data are gathered to answer affect what is collected as well as how it is used and presented. Purposes are numerous and varied and include providing information to stakeholders, providing cross-provincial or international comparisons, identifying needs and patterns, informing policy, monitoring and evaluating policies over time, and advocacy.

We start by providing a brief description of a variety of Canadian survey data sets dealing with patterns of employment and time use, family earnings, community support, child, adolescent, and adult health, and child care arrangements. In our descriptions, we include the years when the survey was conducted, its primary purpose, the survey design, and specifications about the sample surveyed as well as an overview of variables collected (a detailed variable list is available from the first author upon request).

1. Methodological information for national data sets

Table 1 provides a summary of the data sets described, frequency of collection, year(s) administered, and description of the population surveyed.

1.1 Labour Force Survey (LFS) (monthly)

The LFS was developed to provide ongoing and reliable information on the Canadian labour market. It was first administered in 1945 when there were very large labour market changes following the end of the Second World War. The objective of the LFS is to track the number of Canadians who are employed, unemployed, and not in the labour force, and to provide descriptive and explanatory data for each of these categories (e.g., unemployment patterns in different job sectors, hours worked). LFS data are used to produce the Canadian unemployment rate as well as other standard indicators such as the employment rate and the labour market participation rate. Estimates are provided by industry, occupation, public and private sector, hours worked etc. Estimates can be produced for Canada, the provinces and sub-provincial regions. Data are used by government to evaluate and plan employment programs in Canada. Regional unemployment rates are used to determine eligibility level and duration of insurance benefits.

1.2 Survey of Persons Not in the Labour Force (SPNILF) (1992)

A drop in labour force participation from 1990 to 1992 inspired this one-time national survey. The purpose of the SPNILF was to gather information on the following: the past and future attachment to the labour force of those currently not in the labour force; current non-labour force activities; school plans of youth who were neither working nor attending school; and circumstances surrounding the decision to retire.

1.3 Survey of Work Arrangements (SWA) (1991 and 1995)

The first SWA in 1991 addressed the need for information on work arrangements such as work schedules, hours of work, flextime, home-based work, and employee benefits and wages. A second SWA was conducted in 1995 to examine changes in work arrangements since the first SWA, as well as other aspects of working conditions. Both surveys were conducted as supplements to the

LFS. The SWA was administered in November 1995 to a sub-sample of the dwellings in the LFS sample and therefore, its sample design is closely tied to that of the LFS.

1.4 *Survey of Labour and Income Dynamics (SLID) (beginning 1993/1994; 1996; 1999; 2002; and 2003)*

SLID is a longitudinal household survey whose purpose is to understand the economic well-being of Canadians and their families over time: the economic shifts individuals and families live through, and how these shifts vary with changes in paid work, family composition, receipt of government transfers, or other factors. SLID also collects information about related topics such as education and disabilities. An additional purpose of SLID is to give greater insight on the nature and extent of low income in Canada. SLID follows the same respondents for six years. A second panel of new respondents started in 1996, and a new panel starts every three years. This pattern of rotating, overlapping panels will continue until further notice.

1.5 *Labour Market Activity Survey (LMAS) (1986 to 1991)*

The purpose of the LMAS was to provide more extensive longitudinal information about the Canadian labour force than that provided by the monthly Labour Force Survey. Unlike the LFS, which provides ongoing "snapshots" of the labour force, the LMAS was designed to assess the elasticity of both the working-age population and the labour market over a two-year period—in other words, labour market movement and transformation. The same individuals took part in the whole two-year study, rather than being rotated out after six months (as in the LFS). Some examples of LMAS-specific results are: measures of the pattern of employment and unemployment in Canada for 12, 24, or 36 months, the percentage of the population who were in the labour force at least for some time, when they entered and left the market, why they left, and the wage differences in these moves, characteristics of paid jobs held, and socio-economic and demographic profiles of groups eligible for employment and immigration programs (EIC).

1.6 *Survey of Family Expenditures (FAMEX) (1969, 1978, 1982, 1984, 1986, 1990, 1992 and 1996)*

The FAMEX Survey is a survey of family that began in 1953 but was not administered to a nationally representative sample until 1969. Beginning in 1997, FAMEX was integrated into an annual survey called the Survey of Household Spending. There are two major uses of the FAMEX data. The survey was conducted to provide the socio-economic living conditions of households in Canada. The results are utilized to update the weights used in calculating the Consumer Price Index (CPI) as well as to update the values of the low-income cut-off (LICO).

The survey has six main sections: location, housing, characteristics of the reference person, and characteristics of the spouse of the reference person, household description, and expenditure items. Some examples of expenditures that are measured include: consumer goods and services, types of cars and other vehicles, dwelling characteristics, changes in assets, and mortgages and other loans.

1.7 General Social Surveys – Overview

The General Social Survey (GSS) was initiated in 1985 to fill in gaps in national statistical information concerning socio-economic trends. The two primary objectives of the overall GSS are: to gather data on social trends in order to monitor temporal changes in the living conditions and well-being of Canadians and to provide immediate national and provincial information on specific social policy issues of current or emerging interest. The GSS is a continuing program with a single survey cycle each year. Each year has a main core content area and a special focus area. The core area is typically repeated about once every five years.

1.7a General Social Survey (GSS) – Cycles 2, 7, 12 – Time Use (1986, 1992, 1998 and 2003)

A GSS Selection Control Form is completed in every cycle, listing all household members and collecting the following basic demographic information: age, sex, marital status, and relation to the household reference person. A person 15 years of age or older was then randomly selected from households that were part of the GSS sample. A second form was then completed for these selected persons. The core content for Cycle 2 was "time use" including a diary component to describe the daily activities of Canadians. Data included information on social mobility, activities done alone and with others, inter and intra generational mobility and well-being. The content for Cycle 7 was again time use, with a diary component. An additional objective, however, was the measurement of unpaid work including domestic work, child care and volunteer work. Also, questions were added to address participation in sport and cultural activities. In Cycle 12 (1998) the time use content was repeated with additional questions on unpaid work, time looking after children or elderly, volunteer work, participation in sports and cultural activities, time crunch, quality of life, and life satisfaction.

The second form collected general information related to time; the time use diary; a child care diary for respondents with children less than 15 years of age living in the household; information on unpaid help supplied by the respondent to the household, as well as unpaid help provided by the respondent to persons not living in the household; perceptions of time; educational, cultural and recreational activities of the respondent; participation in organized sports; main activity of the respondent; main activity of the respondent's partner or spouse, if applicable; background socio-economic questions for classification purposes.

1.7b General Social Survey (GSS) – Cycles 5, 10, 15 – The Family and Friends (1990, 1995 and 2001)

The core area for the 1995 GSS was "The Family." Five years earlier, "Family and Friends" was the core area with a concentration on the respondent's family and friends as well as relationships and interactions with them. The "friends" part of that GSS was separated from "family" because of increasing interest and increasing complexity in each of these two areas. Data were collected on family and marriage and cohabitation, joint custody arrangements, child leaving, family origins, fertility intentions, value and attitudes towards family life, and work interruptions. In addition, two themes were included in Cycle 10: the effects of environmental tobacco smoke and wartime service (for people 55 and older). Cycle 15 (2001) also included a family component focusing on family, marital history, children, family origin, fertility intentions, values and attitudes.

1.7c *General Social Survey (GSS) – Cycle 11 – Community and Social Support (1996)*

Cycle 11 was the first GSS with social support as the core content. Health, the core subject matter in Cycles 1 and 6 was due for repetition in Cycle 11. Social support replaced it, however, as the introduction of the National Population Health Survey in 1994 eliminated the need to collect health data. Social support is not a new topic for the GSS as it received coverage in the first (core content was health) and fifth (core content was family) cycles. The objectives and scope of Cycle 11 were to understand the dynamics between an individual's social network, help received and provided, and its nature. The "Social Network" consisted of an individual's spouse, family, close friends, relatives, neighbours, co-workers, or any organizations (volunteer or paid) that revolve around an individual. The focus was on help given or received during temporarily difficult times or out of necessity due to long-term health or physical limitations in daily activities in or outside the home. Survey items in Cycle 11 of the GSS asked about social support for a number of areas including: child care, meal preparation, house cleaning, laundry and sewing, house maintenance and outside work, shopping, transportation, banking, and bill payment, personal care, and emotional support. Respondents were asked if they needed support in these areas, why support was needed, who provided this support, and how long the support lasted. Respondents were also asked if they provided any of these supports to others, and if so, similar details about these supports.

1.8 *National Population Health Survey (NPHS) (1995, 1996/1997, 1998/1999, 2000/2001 and 2002/2003)*

The NPHS is a longitudinal panel survey administered every two years that is designed to provide comprehensive measures of the current state of health of Canadians and health care needs. Information is provided on physical and mental health, and social well-being as well as visits to doctors, admissions to hospitals and use of medications. Factors influencing health (work and lifestyle) and changes experienced as people age. During the first three cycles, limited information was collected from all household members and in Cycle 1, one person in each household was randomly selected as the longitudinal respondents for a more in-depth interview. For the first three cycles, the survey is made up of three forms. The first is a general component with limited information collected about all household members. Items in the first form are concerned with two-week disability, health care utilization, restriction of activities, chronic conditions, socio-economic conditions, and income. The second form items deal specifically with the health of household members aged 12 and over. Item areas include: general health, height and weight, access to services, health status, physical activities, injuries, drug use, alcohol use, mental health, social support, and sexual health. The third form is for children under 12 years of age and is completed by their parents. In this component, item areas include: general health, health care utilization, prescription drugs, chronic conditions, health status, and injuries. Cycle 6 contains new information on soft drink and milk consumption, coping, nicotine, and personal and family histories of depression.

1.9 National Longitudinal Study of Children and Youth (NLSCY) (1994/1995, 1996/1997, 1998/1999, 2000/2001 and 2002/2003)

The NLSCY is a longitudinal panel survey designed to measure a broad range of characteristics related to the healthy development and well-being of Canadian children and youth. The primary objective of the NLSCY is to develop a national database on the characteristics and life experiences of children and youth in Canada as they grow from infancy to adulthood. Additional goals of the survey include determining the prevalence of various biological, social and economic characteristics and risk factors of children and youth in Canada; to monitor the impact of such risk factors, life events and protective factors on the development of these children; and to provide this information to policy and program officials for use in developing effective policies and strategies to help young people live healthy, active and rewarding lives. Underlying these objectives is the need to: fill an existing information gap regarding the characteristics and experiences of children in Canada, particularly in their early years; focus on all aspects of the child in a holistic manner (i.e., the child, his/her family, school, and community); provide national, and as far as possible, provincial-level data; and to explore subject areas that are amenable to policy intervention and which affect a significant segment of the population.

The NLSCY was jointly conducted on behalf of Statistics Canada and Social Development Canada (formerly, Human Resources Development Canada) beginning in 1994 to1995 and with subsequent cycles conducted every two years. The NLSCY surveys the non-institutionalized population in Canada's 10 provinces. The longitudinal sample presently (at Cycle 5) consists of three cohorts. The first cohort consists of children aged 0 to11 years at the time of selection at Cycle 1 in 1994, and who are 8 to19 years of age at Cycle 5. They will remain in the survey until they reach the age of 25. The second cohort is made up of children aged 0 to 1 at the time of their selection at Cycle 3 in 1998 and who are 4 to 5 years at Cycle 5. This cohort is not followed past Cycle 5. The third cohort consists of children aged 0 to 1 at the time of their selection at Cycle 4 in 2000 and who are 2 to 3 years of age at Cycle 5. These children will be interviewed once more in cycle 6 and will not be followed past Cycle 6.

Information for the NLSCY was collected based on personal, telephone, and computer-assisted interviews. The person most knowledgeable about the child, referred to as the PMK, was selected as the respondent; however, additional information was provided by the child (direct measures or self-reported), teachers, and principal at the child's school. Child domains that have been assessed have included measures of child health and physical development, child temperament, developmental stages, social and behavioral competencies, verbal ability, measures of school readiness, peer relations, academic achievement, and data on the child's social environment (family, friends, schools, and communities). In addition, a large amount of information was collected about the PMK and spouse (if relevant) including socio-demographic information, information about physical and emotional health, parenting, social support, and information about where the family resided.

1.10 National Child Care Survey (NCCS) (1988)

The NCCS was a one-time national survey conducted as a supplement to the September 1988 Labour Force Survey (LFS). It was designed to collect comprehensive data on Canadian families' child care needs, patterns of use, and parental preferences and concerns. Relationships among

family, work, and child care are also examined. Data are collected from a randomly selected adult in the household concerning information for all children in the family.

The NCCS had six objectives:

1. accurately describe the nature of child care needs in Canada,
2. accurately depict patterns of current child care use,
3. examine preferred child care arrangements and options,
4. investigate factors relating to child care needs, patterns of usage and preferences,
5. examine how different child care patterns and preferences relate to children, mothers, fathers and relationships,
6. describe how parents feel about the affordability and quality of major child care options.

2. Summary of variables by survey

Table 2 provides an overview of the variables collected by each survey. These variables are grouped into the following categories: socio-demographic characteristics, child demographics, variables related to work and family responsibilities, and child care and child outcome variables. Each of the described surveys collected detailed socio-demographic information and several collected at least partial child-related demographic information. Since surveys described in this study were selected based on relevance to work/family and child care factors, it is not surprising that all but three surveys collected some information related to work/family balance. However, information on child care was only collected in 5 of the 10 surveys.

3. Summary of studies using Canadian national data sources

A small body of Canadian studies has taken advantage of available national survey data to examine issues of parental employment, barriers to employment, division of labour/household responsibilities, use of child care arrangements, and the impact of child care and early educational experiences on children's competencies. The first set of studies examines factors influencing female labour force participation such as the presence of young children and the cost of child care.

Chaykowski and Powell (1999) used the Labour Force Survey (LFS) and the Survey of Labour and Income Dynamics (SLID) to examine trends in female labour force participation over time, as well as unemployment and wage and income inequality in females relative to males. Findings indicate that from the period from 1978 to 1998, female labour force participation has increased so that it matches that of males. However, the presence of children makes a difference. Female labour force participation rates are lower for women with young children as compared to the participation rates of males and to the participation rates of females without children. Maternal decisions to take on part-time work were also influenced by women's roles as primary care-provider.

Phipps, Burton and Lethbridge (2001) used 1995 data from the GSS to examine the effect of parenthood on male and female income. Phipps demonstrated that Canadian mothers who work have lower incomes than women with no children. In 1996, mothers who worked full-time in the paid labour force earned 87.3% of the income received by women who never had children. However, there was no "penalty" for men with children. Fathers employed full-time in the labour force earned higher incomes than males without children (133.6% in 1996). The "family gap" was

partially explained by the fact that women with children acquire less experience but also that human capital "depreciates" during a long absence from paid employment. Examining returns to the same jobs as compared to returns to different jobs, there was no income penalty associated with time off without a job change, but a significant negative penalty was associated with time out followed by a job change. Weekly hours of unpaid work were negatively associated with women's current incomes and controlling for unpaid work hours as well as career interruptions lowered but did not eliminate the "family gap".

Cleveland, Gundarson and Hyatt (1996) looked at a sample of two-parent families with preschool children (aged 5 years and younger and not in school) living in Ontario, using data from the 1998 National Child Care Survey, to examine differences in the labour supply behavior of men and women. They showed that there was a negative effect on the probability of labour force participation by married mothers who had preschool-aged children. They also showed that the differences in labour supply behaviors of men and women are explained by the presence and age of children. Mothers are much less likely to participate in the labour force if they have more than one child under the age of 6, but mother's expected wages have a positive impact on the decision to use daycare as well as on the decision to engage in paid employment. However, Powell (1997), using data from the 1988 NCCS and the 1988 LFS, showed that the cost of child care was an important factor related to the relationship between the presence of children and maternal employment decisions. Powell demonstrated that once the cost of child care was accounted for, preschool-aged children no longer have a significant negative effect on the mother's decision to participate in the labour force, although younger children (0 to 2 years) do. In addition, Powell found child care costs to be a greater deterrent to mothers' participation in full-time work as compared to part-time work.

In a study further exploring the gender differences in patterns of employment (Phipps and Burton, 1998) used data from the 1992 Family Expenditures Survey to show that male and female income have differential influences on household expenditures. For example, expenditures on child care increase only with women's income and when both spouses are employed full-time, higher male income is not associated with higher expenditures on child care.

These studies suggest that child care responsibilities including financial expenditures on market care are the woman's responsibility. In addition to the gender differences in patterns and influences on employment and family expenditures, Phipps, Burton and Osberg, 2001 used the 1990 General Social Survey to explore gender differences in reported satisfaction with time for self, whereas previous research has examined material goods. Access to free time is a source of inequality in the family and they show that women in dual-earner families are more time-stressed than men despite high levels of paid work by women. The main predictor of time stress was not the total annual hours worked but the hours worked per week.

The studies conducted to date have examined patterns of parental employment, impact of the cost of care on employment, as well as the allocation of household income to child care expenses and time stress faced by dual-earner families. These studies have just begun exploring the issues that survey data can address with respect to child care and child and family well-being. As Chaykowski and Powell (1999) point out, a number of issues are important yet remain unexplored. For example, we know little about the costs and availability of child care programs in Canada. Should programs be universal or targeted? Should programs be licensed or informal types of arrangements? Who should

get the subsidies, child care providers or parents? What is the need for flexible care arrangements (evenings, weekends)? Unfortunately, Canadian national level data are not available to address these important policy relevant issues.

A separate set of studies have begun to explore patterns and predictors of various child care choices and effects on young children. Cleveland and Hyatt (1993) using data from the 1988 National Child Care urvey examine predictors of different types of care for Quebec and Ontario. Kohen, Hertzman and Willms (2002) used Cycle 1 data from the National Longitudinal Survey of Children and Youth to examine patterns of care used by Canadian preschool-aged children.

Cleveland and Hyatt (1993) do a comparative study looking at the predictors of child care choices in two Canadian provinces, Quebec and Ontario using data from the 1988 Canadian National Child Care Survey. For preschoolers, whose mothers worked, prices of care arrangements depend on the type of care, age of the child, and whether or not the child is eligible for subsidies. In addition, factors such as mother's as well as father's income, work schedules and work shifts as well as maternal levels of education were important determinants of child care arrangements. For both Ontario and Quebec, maternal annual income had a positive impact on the choice of day care arrangements and a negative impact on choosing family types of care. But unlike results in U.S. studies, father characteristics were also found to have an influence on child care choices. Father's income had a positive effect on choosing centre-based care in both Quebec and Ontario. For Quebec, father's income was associated with family types of care but negatively associated with sitter care (both in and outside the home). If a mother worked part-time, preschoolers were less likely to use centre care and more likely to use an in-home sitter or care by the father rather than care by a relative (this pattern was similar for both Ontario and Quebec). Work schedules were also shown to have an impact on the type of care used. For example, children whose fathers work non-day shifts are less likely to use day care or care by a neighborhood sitter rather than care by a relative. When mothers work non-day shifts, the probability increases that care will be provided by the father rather than by another relative (in both Quebec and Ontario). University education tended to increase the likelihood of using any form of market care rather than care by a relative, but these effects were not statistically significant. Having a 2 to 3 year-old (rather than an infant), working full-time (rather than part-time), higher levels of maternal income, and mother's attendance at university, all had a positive effect on the use of centre-based child care in both provinces.

Kohen, Hertzman and Willms (2002), using data from the 1994/1995 National Longitudinal Survey of Children and Youth to describe patterns of child care use, found that unregulated care outside the home (14.5%) was the most frequent type of care used by Canadian preschoolers, aged 4 to 5 years, this was followed by the use of regulated daycare (12.2%). Patterns of care were characterized by factors such as household income, single parenthood, and the number of hours in care. Families with the highest average income used unregulated care and families with the lowest average income used no care arrangements or care by a relative. Less than 10% of children in unregulated home care lived in single-parent families and less than 10% of children in unregulated out of home care lived in single-parent families, but almost 25% of children in regulated care were from single-parent families. This may be due to the availability of subsidies to eligible families, however, the type of care the subsidies cover varies by province. The highest number of hours is spent in regulated day care, an average of 26.2 hours per week with unregulated in home care coming second, with 24.4 hours.

Kohen, Lipps and Hertzman (2006) demonstrated that participation in preschool programs, separate from day care programs, vary by family socio-economic conditions. Examining a sample of 2 to 3-year-olds from the first cycle of the NLSCY, half of the children participated in some form of child care arrangement or preschool program such as nursery school or play group. Thirty percent of all children participated in some form of child care arrangements and 21% participated in some form of preschool program. Unregulated family day care was used the most frequently by 2 to 3-year-olds, followed by nursery school, care by a relative, and participation in a play group. Care by a non-relative in the child's home (sitter or nanny), licensed day care centres, licensed family day care, and "other" programs were less frequently used.

Various family factors were associated with these different patterns of use. Children who participated in licensed daycare centres lived in families with the lowest median household income, followed by children who participated in nursery schools and "other" preschool programs. Children in licensed day care centres were also more likely to be from single-parent families. Children who lived in households with the highest median income most often used non-relative care in the home. These families had a median income that was double that of families of children who used day care centres. Moreover, children who did not participate in any form of care arrangements or preschool programs lived in households with the lowest median income. However, differences in income may be attributable to subsidies being offered for certain types of care which varies by province.

Children who participated in non-relative care in the home and those who participated in non-regulated family care had the most highly educated mothers. However, children who did not participate in any child care arrangements or preschool programs had the fewest mothers with high levels of education.

The third set of studies that will be reviewed examine the associations of different patterns of care arrangements and child competencies and whether children's competencies differ across different types of arrangements before and after adjusting for family structure and socio-economic factors.

Kohen, Hertzman and Willms (2002) found that children from low-income families cared for in regulated or unregulated care arrangements had better vocabulary scores than those children cared for by relatives or not using any type of care arrangements. Prosocial behavior scores were lowest for children in licensed day care and highest for children in unregulated home care and relative care. The difference between prosocial scores for children in licensed care and children in no other care arrangements was not significant nor was the difference between no other arrangement and in home care or care by a relative statistically different.

Lefebvre and Merrigan (2002) addressed a similar question using the same cycle of data but found negligible effects of day care arrangements on children's motor and social development scores and vocabulary scores. Discrepancies between the findings of these two studies may be due to the differences in classification of day care arrangements (for example, Lefebvre and Merrigan (2002) do not differentiate between regulated and non-regulated care, nor do they differentiate between relative or sibling care) and differences in control variables examined. For example, Lefebvre and Merrigan attempt to control for schooling (Kindergarten or Grade 1) and "education type care". Eligibility and availability of Kindergarten varies by province and child age and appears to be confounded in the models they present. They find that non-parental care arrangements do not have

an effect on young children's competencies but when care arrangements are combined with additional educational programs such as Kindergarten they have a small but positive impact.

Using both Cycles 1 and 2 from the National Longitudinal Survey of Children and Youth, Lipps and Yiptong-Avila (1999) examined the impact of early childhood education programs and day care for preschoolers and outcomes two years later when the children were in Kindergarten or Grade 1. Children who were exposed to these early experiences had better teacher ratings of communication skills, learning skills, math, and receptive verbal ability scores. These effects remained statistically significant even when family socio-economic factors such as income and maternal levels of education were considered. Unfortunately, this study confounded day care experiences (regulated centre care, home care, care by nanny, or care by relative) with other types of programs available to preschool-aged children (nursery schools, play groups, mom and tot programs) and did not take into account the frequency of participation in these various programs.

In a follow-up study Kohen, Lipps and Hertzman (2006) re-examined associations of participating in child care arrangements separately from participation in preschool programs on a variety of standardized, parent, and teacher-reported child outcomes. While positive effects were associated with participating in licensed day care, care by a non-relative in the home, non-regulated family day care, nursery schools, and "other" preschool programs, once family socio-economic factors were considered these effects were not statistically significant. However, a number of interesting moderating effects of family socio-economic factors were found. For example, children whose mothers had high levels of education who participated in nursery school had higher ratings of academic skills and receptive verbal ability, but children whose mothers had low levels of education did not differ if they participated in nursery school or not. Children whose mothers had low levels of education and who participated in licensed day care had higher teacher ratings of skills (no difference for highly educated moms).

There exist limitations to the findings from survey studies examining the associations with children's competencies. The first is that children are not arbitrarily assigned to different types of care and there are a variety of factors that influence child care choices as well as child outcomes. These are difficult to separate. Findings from survey studies need to be interpreted in conjunction with findings from other studies including experimental, qualitative, and smaller scale quantitative child care studies. Participation in early childhood programs is often ascertained in surveys based on maternal report and the assumption is that these reports are accurate. To the extent that it is possible, it would be valuable to collect information from additional and varied sources to confirm the accuracy of parental reports of patterns of use and characteristics of care arrangements. The outcomes collected in survey studies are not representative of all skills necessary for school readiness or academic achievement but can serve as indicators. Findings from national survey data sources need to be put into the context of other studies that have had the opportunity to collect data on other readiness skills such as expressive verbal abilities, cognitive skills, gross and fine motor skills, emotional and social skills etc.

Cleveland and Hyatt (1997) point out limitations of the NLSCY in particular, to study effects of child care on child development. Price of care, number of children in care arrangements, the training and experience of caregivers, the evaluation of the quality of care used (structural-adult to child ratio, education of caregivers, group size) as well as process-nature of caregiver interactions,

stimulation, and age appropriateness of the program are not collected, nor is child care history carefully tracked. With revisions to each cycle of the survey, the NLSCY has included some of these measures in recent cycles.

Other studies have focused on policy-relevant aspects of child care, particularly child care workers' wages, and employment decisions of young mothers.

Cleveland and Hyatt (2002) used data from the Caring for a Living Study collected in 1991 (a joint project of the Canadian Day Care Advocacy Association and the Canadian Child Day Care Federation) and the 1991 Census to examine Canadian child care workers' wages. Findings show that centre-based child care workers' wages are low relative to other female workers with similar levels of education but job experience and education are associated with higher wages. Those working for a unionized centre or non-profit centres earn more than those working in "for profit" centres. Generally, turnover rates are high partly because of low levels of wages and benefits. More highly educated workers are more likely to leave and find other jobs. High staff turnover has been shown to have a negative impact on children's healthy development.

Cleveland and Hyatt (2003) conduct policy-based simulations on data from the Canadian National Child Care Survey (NCCS) to examine the effects of welfare reform and the employment decisions of lone mothers. They found that the decision to use market forms of care depends on maternal income, the price of care, the availability of no-cost care by relatives, and maternal preferences. Social assistance policies have an impact on these decisions. In this study, as in studies of two-parent families (Cleveland, Gunderson and Hyatt, 1996; Powell, 1997) findings suggest that child care costs are a barrier to the employment of lone mothers of preschoolers. Subsidization of child care increases employment participation and increases the use of child care. These simulations suggest that welfare reforms combined with assistance for child care can act as incentives for encouraging young mothers to participate in the labour market.

Marshall (2003) used data from supplements to the Labour Force Survey (LFS) to examine the impact of extended parental benefits on patterns of employment. The extension of parental benefits from 10 to 35 weeks in 2001 was related to an increase in time away from work for employed mothers who received benefits. Time away from work increased from 6 months in 2000 to 10 months in 2001. Over 80% of these women returned or planned to return to work within two years. Despite the extended time off, 25% of those who received benefits were back to work in eight months. Shorter leaves were related to father's receipt of parental benefits, and the mother having a non-permanent, or low paying job. However, those who did not receive maternal or parental benefits returned to work after four months. Moreover, more new mothers received maternal or parental benefits in 2001 (61% vs. 54%) because of the reduced number of hours required to receive benefits and women's increased labour force participation. Unfortunately, in this study the impact of child care cost and availability could not be examined since these data were not included.

Using data from the 1998 Survey of Labour and Income Dynamics (SLID), Drolet (2002) examined the impact of parenthood and the timing of child bearing on Canadian women's wages. When the timing of children was taken into account, mothers who had their children later in life earned 6% more than mothers who had their children early in life. Interestingly, no significant difference was

found in the wages of women who delayed having children and those who had no children. A related topic of interest would be the impact of delayed child bearing on patterns of child care use.

3.1 Potential areas of research inquiry

National survey data have been and continue to be collected and have been shown to answer a variety of questions dealing with family composition, socio-economic conditions, patterns of employment, and caregiving characteristics and responsibilities. This section gives examples of research questions that remain to be examined using the surveys previously described.

- The SWA and the SLID can yield information on the reasons individuals are employed part-time or work irregular schedules as well as reasons for work absence or working at home.
- The FAMEX survey could yield information on what family characteristics, other than income, is associated with child care expenditures.
- The GSS-Time Use can be used to answer a number of interesting questions. Data are provided on family socio-demographic characteristics along with interesting and important details such as the reasons for part-time employment, number of hours spent caring for children, as well as a detailed child care diary and information on child care expenditures.
- The GSS-Family and Friends provides unique information on respondents' perceptions of gender roles, the importance of the role of parents in relation to employment, earning income, caring for children, and perceived effects on children. Questions are also asked about frustrations experienced balancing work and family and the satisfaction with the balance between caregiving responsibilities, work, family, and home responsibilities. Data can also be examined with respect to the number of hours spent on employment and care giving.
- Another survey that could yield interesting information is the GSS-Community and Social Support which reports on a variety of family socio-demographic characteristics, current use of child care, persons who provide care, length of time child care has been provided, need for additional assistance with children, reasons why additional assistance was necessary, and reason why parents were not the sole providers of child care.
- The NPHS can yield interesting information on family size and family composition and employment conditions such as shift work, schedules, and hours worked and associations with adult health. The NPHS also has the advantage of long-term administration with new data collected every two years.
- The NLSCY provides a wealth of information about family socio-demographic characteristics; child characteristics, child outcomes, and information on care arrangements. This longitudinal survey has the advantage of data collection every two years. Interesting analyses could be conducted examining regional differences in the availability of different types of care arrangements and changes that occur over time, as well as the long term effects of different types of arrangements on child development. Studies focusing on child care do not need to be limited to care arrangements for preschoolers as data are available for examining after-school care arrangements of school-age children (see Kohen, Lauzon and Hertzman, 2002, for an example).

3.2 *Gaps and limitations*

While information in various surveys can be used to examine patterns of employment and family socio-demographic characteristics, there is very little national information collected with respect to specifics about child care use. Survey items on child care arrangements need to be included in surveys of work arrangements for families who have children. Interestingly, many of the surveys focus on employment and barriers to employment but do not include items about child care use. For the majority of Canadian families with young children, the affordability, access, and availability of child care arrangements that parents feel comfortable using represent a real barrier to employment. In addition, information on the availability, accessibility, and quality of child care arrangements needs to be examined, together with details about family members' health, well-being, and reported stress.

Gaps in the data, however, do not allow us to answer questions such as:

1) How do different working conditions and child care arrangements impact the family?
2) How are patterns and hours of employment and care giving associated with family stress and coping?
3) How does satisfaction with one's employment conditions, home responsibilities, and child care arrangements influence children's well-being and individual family members' physical and mental health?
4) How do families make decisions and choices around child care arrangements and household responsibilities?

Despite the vast amount of information collected on patterns of employment and household socio-demographic characteristics, information is lacking on patterns of employment (e.g., shift work, hours of work, number of jobs, full-time versus part-time employment, flexibility of schedules, the impact of benefits). These factors can influence child care choices and can impact the functioning, health, and well being of families with children. Existing national data are limited and at times outdated. For example, the NCCS has been the most comprehensive survey of child care needs and patterns of utilization in Canada. Data from the NCCS are over 15 years old and much of the information would be of limited relevance in light of changing policies. Moreover, since the NCCS data were only collected at one point in time (1988), there is no opportunity for examining changes of care patterns over time, an important aspect especially when provinces implement new and varied policies benefiting families with young children (tax credits, year long maternity leave, universally subsidized day care, to name a few). In addition, the NCCS did not collect information on child outcomes nor measures on child care quality. An update and expansion of this survey or of a survey yielding similar information would be extremely timely and informative.

Unfortunately, one of the best national Canadian surveys to date to examine the effects of child care arrangements on child outcomes is the NLSCY. This data set is limited as data are collected every two years, with much information lost, particularly about child care arrangements within that period. Moreover, no information is collected on the quality of care arrangements used, nor do we know if parents are accurate reporters of the type of care arrangements their children use (licensed, unlicensed, family etc.). Measures and checklists of child care quality are available such as the Early Child Environment Rating Scale (ECERS), Harms, Clifford and Cryer, 1998), the Day Care Home Environment Rating Scale (DCHERS) and other proxy measures could also be included. The most

recent cycle (Cycle 3) of the NLSCY does use proxy measures, including items such as parental reports of adult-child ratios, number of children in arrangement, qualifications of caregivers, etc.

Another opportunity would exist if national data sets could be linked with other sources of data such as administrative or provincial data sources, or if cohort information could be derived. For example, with respondent permission, survey data could be linked to tax data, school transcripts, and health records. Linkages would allow for a more complete picture on child and family characteristics related to child care choices and would be good candidates to provide longitudinal as well as updated information on the inter-relationships of familial patterns of work, caregiving responsibilities, child care choices, social support, and both parental and child health and well being.

4. Conclusions

This paper has described a number of survey data sets that collect information on familial patterns of employment, time use, family earnings, child care arrangements, and child, adolescent, and adult health. Numerous questions remain unanswered in terms of patterns of employment, division of labour in the home, household responsibilities, child care decisions, and family and child health and well-being. A number of general questions concerning familial patterns of employment, use of care, and family roles and responsibilities can be examined using existing data. Associations with patterns of child care and child outcomes can be developed but with some limitations as stated previously. Although there is a wealth of survey information that can serve to inform, there is a general lack of high quality Canadian child care data collected at the national level to inform families, parents and policy makers.

Table 1 Summary of survey methods

Survey	Frequency	Date administered	Population
1) Labour Force Survey (LFS)	Monthly	1945 to present	Representative civilian, non-institutionalized Canadian population 15 years of age and older. Excluded are residents of the Yukon, Northwest Territories, people living on Indian reserves, full-time members of the armed forces and inmates of institutions. N=53,980 (as of January 2003)
2) Survey of Persons not in the Labour Force (SPNILF)	Once	November 1992	Subsample of Labour Force Survey. Sampled household members aged 15 to 69 years not in the labour force excluding full time students and those permanently unable to work. N=10,188 (92% response rate)
3) Survey of Work Arrangements (SWA)	Twice	1991 and 1995	Supplement to the LFS. Surveyed residents of households aged 15 to 69 who were paid workers or self-employed. N=27,544 in the 1991 survey N=25,721 in the 1995 survey
4) Survey of Labour and Income Dynamics (SLID)	Biyearly	1993 to present	Longitudinal survey for six years with new panels starting every three years. First panel size was 15,000 households. N=31,000 adults aged 16 years and older
5) Labour Market Activity Survey (LMAS)	Six times	1981, 1986, 1987 to 1990	All Canadian aged 16 to 69 years. N=66,934 for 1986 N=63,016 for 1990
6) Survey of Family Expenditures (FAMEX) Replaced in 1997 by the Annual Survey of Household Spending	Every two years	1953 to 1969, 1978, 1982, 1984, 1986, 1990, 1992 and 1996	Administered to a nationally representative sample in 1969 (except 1984 and 1990). Surveyed persons living in private households in the 10 Canadian provinces including Whitehorse and Yellowknife. Based on the LFS sampling frame. Not represented are residents of Indian reserves, patients and inmates living in collective households such as old age homes, penal institutions, and hospitals, official representatives of foreign countries and their families, members of religious or communal colonies, and those temporarily living away from home. N=14,765 in 1996 N=22,171 for Survey of Household Spending in 2001
7a) General Social Survey (GSS)	Annual-Main core content and specific focus area (repeated every five years)	Initiated in 1985, continues presently	People aged 15 years and older in Canada, living in private households in 10 provinces excluding Yukon and the Northwest Territories and full-time residents of institutions. N=10,000 until 1998 but increased to 25,000 in 1999 to allow for national and provincial estimates N=25,090 in 2000
b) GSS – Time Use	Every five years	1986, 1992 and 1998	A telephone survey given to a nationally representative sample of Canadians over 15, excluding residents of the Yukon and North West Territories, and full-time members of institutions. N=10,749 for 1998 (Cycle 12), response rate was 77.6%

Table 1 Summary of survey methods (concluded)

Survey	Frequency	re administered	Population
c) GSS – the Family	Every five years	90, 1995 and 2001	All Canadians aged 15 or older living in the 10 provinces but not living full-time in an institution. N=24,301 in 2001 N=13,495 in 1990 N=10,749 in 1995
d) GSS – Community and Social Support Social Support and Aging	Once but also collected as part of GSS 1985 (health) and 1990 (family)	Cycle 11-1996 Data collected monthly from February 1996 to December 1996 1996 and 2002	People aged 15 years and older in Canada, living in private households in 10 provinces excluding Yukon and the Northwest Territories and full-time residents of institutions. N=12,756, response rate was 85.3%
8) National Population Health Survey (NPHS) Household Component (Longitudinal)	Every two years	1994-1995, 1996-1997, and 1998-1999 2000-2001 and 2002-2003	Household and institutional residents in all provinces and territories, except persons living on Indian reserves, Canadian Forces bases, and some remote areas. N=58,439 respondents for general questionnaire in 1994 and 1995 and N=17,626 respondents provided in-depth information in 1994-1995; N=15,670 longitudinal respondents provided in-depth information; and N=81,804 provided in-depth information in 1996-1997
9) National Longitudinal Survey of Children and Youth (NLSCY)	Every two years	1994-1995, 1996-1997, 1998-1999, 2000-2001 and 2002-2003	Canadian children aged newborn to 11 years. Children living in institutions and on Indian reserves were not included. Households with children were selected from the Labour Force Survey sample with an additional sample from the Yukon and Northwest Territories. Sample selected from each province to allow for reliable provincial estimates for children aged 0 to 11 years. N=22,831, 1994-1995 N=16,897 longitudinal children. Newborns aged 0 to 1 added, New Brunswick added a cohort aged 2 to 5 to produce reliable estimates for preschoolers, 1996-1997 N=20,025 cross-sectional children aged 0 to 13 years, 1996-1997 N=31,194 preschool sample size increased, and children aged 0 to 1 added, 1998-1999 N=27,000 longitudinal children and N=9,500 cross-sectional households, 2000-2001
10) National Child Care Survey (NCCS)	Once	1988	Supplement to the 1988 Labour Force Survey. Target population was all children under the age of 13 years and all economic families with at least 1 child under 13 years. Yukon and Northwest Territories are excluded as are children in institutions, children on First Nations reserves, families temporarily residing in Canada and families living outside of Canada. N=42,131

Source: Statistics Canada.

Table 2 Summary of variables collected by survey

Survey	Socio-demographic	Child-related demographic	Work/family balance	Child care/child outcomes
1) Labour Force Survey (LFS)	Yes	No	No	No
2) Survey of Persons not in the Labour Force (SPNILF)	Yes	No	Main reason not looking for work; main activity last week.	No
3) Survey of Work Arrangements (SWA)	Yes	No	Reason for part-time employment, irregular schedule, work absence, working at home.	No
4) Survey of Labour and Income Dynamics (SLID)	Yes	Number of children by age group, child tax benefit	Reason for part-time employment, irregular schedule, reason for work absence.	No
5) Labour Market Activity Survey (LMAS)	Yes	Number of children by age group	No	No
6) Survey of Family Expenditures (FAMEX) Replaced in 1997 by the Annual Survey of Household Spending	Yes	No	No	Child care expenditures.
7a) General Social Survey (GSS)	Yes	No	Depending on the cycle; Cycle 15 collected family information, including values and attitudes as well as work history. Cycle 12 includes data on unpaid work activities. Cycle 10 was on the family, Cycle 9 was on education, work and retirement, and so on.	Depends on the cycle. Cycle 15 collected family information, including survey questions on child care as a reason for absence from work, not enough time for family, number of children in the family.
b) GSS – Time Use	Yes	No	Employment hours, shifts, number of jobs, full versus part-time, job code, weeks worked past year, flexibility of schedule, household activities, reason for part-time employment, time-use diary; unpaid help by respondent to household members and those outside the household; domestic, child care and volunteer work; perception of time; participation in education, cultural, recreational, organized sports activities; time crunch; quality of life.	Number of hours spent caring for household children, child care diary for children under the age of 15 years.

Table 2 Summary of Variables Collected by Survey (continued)

Survey	Socio-demographic	Child-related demographic	Work/family balance	Child care/child outcomes
c) GSS – Family	Yes	Number of children	Employment hours, shifts, job code, weeks worked past year, Interactions with family, friends and relatives; marital history; custody arrangements; child leaving; family origins; fertility intentions; values and attitudes to family life; work interruptions, satisfaction with balance between job, family and home life, reason for dissatisfaction with balance between job, family, home life.	No
d) GSS – Community and Social Support	Yes	Number of children, age of youngest family member	Employment hours, job code, number of weeks worked, help given or received during difficult times or out of necessity due to long-term health or physical limitations in daily activities. Social support for child care, household tasks, personal care, emotional support, whether or not support was needed, why needed, who provided support, how long support lasted, supports provided to others.	Caregiving provided by those aged 65 and older (Cycle 16). Assistance provided for caragiving or assistance given for caregiving (Cycle 17).
8) National Population Health Survey (NPHS)	Yes	No	Hours of employment, employment shifts, health care use, restriction of activities, chronic conditions, health.	No
9) National Longitudinal Survey of Children and Youth (NLSCY)	Yes	Family type, relationship to child, age of child, gender, birth date, number of children	Employment hours, employment shifts, number of jobs, full-time versus part-time, job code, number of weeks, main activity last week.	Currently use child care, type of care used, hours per week in current arrangement, licensed care, profit or non-profit, how well does child get along with care provider, primary arrangement, length of time used, number of times arrangements changed in past 12 months, reason for change, type arrangement used during summer, parent work status and reported child care use.

Table 2 Summary of variables collected by survey (concluded)

Survey	Socio-demographic	Child-related demographic	Work/family balance	Child care/child outcomes
10) National Child Care Survey (NCCS)	Yes	No	Employment hours, shifts, flexibility of schedule, reason for work absence, reason not looking for work, main activity last week, satisfaction with balance between job, family and home life, reason for dissatisfaction with balance between job, family, income.	Currently use child care, type of care used, who provided care in last 12 months, hours per week in current arrangement, licensed care, profit or non-profit, number of times arrangements changed in past 12 months, total number of arrangements used, total hours in care, reason for change, number of hours spent looking after children, number of hours spent looking after household children, reason for someone else providing care, child care expenditures.

Source: Statistics Canada.

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